

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form*. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions.

1. Name of Property

Historic name: Hanapepe Road Bridge

Other names/site number: _____

Name of related multiple property listing: N/A

(Enter "N/A" if property is not part of a multiple property listing)

2. Location

Street & number: Hanapepe Road

City or town: Hanapepe State: Hawaii County: Kauai

Not For Publication: Vicinity:

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

I hereby certify that this ___ nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property ___ meets ___ does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

 national X statewide X local

Applicable National Register Criteria:

 X A ___ B X C ___ D

_____ Signature of certifying official/Title:	_____ Date
_____ State or Federal agency/bureau or Tribal Government	

In my opinion, the property ___ meets ___ does not meet the National Register criteria.	
_____ Signature of commenting official:	_____ Date
_____ Title :	
_____ State or Federal agency/bureau or Tribal Government	

Hanapepe Road Bridge
Name of Property

Kauai Hawaii
County and State

4. National Park Service Certification

I hereby certify that this property is:

- entered in the National Register
- determined eligible for the National Register
- determined not eligible for the National Register
- removed from the National Register
- other (explain:) _____

Signature of the Keeper

Date of Action

5. Classification

Ownership of Property

(Check as many boxes as apply.)

- Private:
- Public – Local
- Public – State
- Public – Federal

Category of Property

(Check only **one** box.)

- Building(s)
- District
- Site
- Structure
- Object

Hanapepe Road Bridge
Name of Property

Kauai Hawaii
County and State

7. Description

Architectural Classification

(Enter categories from instructions.)

Other: Concrete Deck Girder

Materials: (Enter categories from instructions.)

Principal exterior materials of the property: concrete _____

Narrative Description

(Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources if applicable. Begin with a **summary paragraph** that briefly describes the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity.)

Summary Paragraph

The Hanapepe Road Bridge traverses the Hanapepe River, connecting one side of the town of Hanapepe to the other. It is a single lane, concrete, deck girder bridge, which is 194' long and 18' wide from curb-to-curb. The four span bridge runs east-west over the river and has an elevated, concrete walkway on its *makai* (south) side. Although it is situated in a commercial area, it has a tranquil setting, as it is now on a secondary road, the result of the 1938 belt highway [now Kaumualii Highway], with its own historic bridge, bypassing Hanapepe and handling the majority of the traffic. On both the up and down stream sides of the bridge levees form the banks of the river to provide flood control. The bridge is in fair condition, and retains its historic integrity of design, materials, workmanship, setting, location, feeling and association.

Narrative Description

The Hanapepe Road Bridge carries Hanapepe Road over the Hanapepe River. This reinforced concrete, deck girder bridge has a four span concrete deck, which is 194' long with a curb to curb deck width of 18'. The deck has an asphalt overlay, and a 6" waterline mostly buried in fill and AC runs along the inside of the north parapet.

Hanapepe Road Bridge

Name of Property

Kauai Hawaii

County and State

The superstructure consists of two concrete girders that support transverse, reinforced concrete floor beams, which are spaced 5' on center. The two girders also serve as the parapets. The 3' high parapets are solid, with the *mauka* parapet surmounted by an approximately 10" high, 2' - 3" wide, beveled cap and the *makai* by a concrete walkway. The date "1911" is incised at both ends and in the middle of the *mauka* parapet, and on the west end of the *makai* parapet.

Three concrete piers, approximately 48'- 6" apart, support the superstructure. The impressions from their wood formwork are readily apparent on the piers, as well as both faces of the parapets. All three piers are submerged in water from 1.5' to 10' deep. The bridge is also supported by concrete abutments with concrete rubble masonry wing walls on both the upstream and downstream sides.

A 4'-8" wide concrete sidewalk was added along the top of original downstream (*makaï*) parapet in 1927. A steel frame supports the concrete sidewalk as it extends out over the water on the downstream side of the bridge. Steel knee braces support the frame and are bolted into the downstream parapet's fascia. The sidewalk is a 4" thick concrete slab, reinforced with square rebars spaced 4" on center in the transverse direction. A straight run of eight concrete steps access the walkway from the east and at the west end a set of nine concrete steps running perpendicular to the bridge serve a similar function. A 2.5" diameter pipe railing is mounted to both sides of the concrete sidewalk and its steps.

The east approach to the bridge features a low concrete approach wall on the *mauka* side, and a low masonry rubble wall on the *makai* side. A sidewalk runs up to the elevated walkway's steps. The levee's southeast concrete wall ties into the masonry rubble approach wall. The west approach to the bridge has no approach walls, and the Seto building, which is listed in the Hawaii Register of Historic Places, sits next to the bridge on its *mauka* side.

The Hanapepe Road Bridge retains its historic integrity. The elevated walkway was constructed in 1927 and is over fifty years of age, having achieved historic significance in its own right.

Hanapepe Road Bridge
Name of Property

Kauai Hawaii
County and State

8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- A. Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B. Property is associated with the lives of persons significant in our past.
- C. Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D. Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

- A. Owned by a religious institution or used for religious purposes
- B. Removed from its original location
- C. A birthplace or grave
- D. A cemetery
- E. A reconstructed building, object, or structure
- F. A commemorative property
- G. Less than 50 years old or achieving significance within the past 50 years

Areas of Significance

(Enter categories from instructions.)

Transportation
Engineering

Hanapepe Road Bridge
Name of Property

Kauai Hawaii
County and State

Period of Significance

1911-1927

Significant Dates

1911, 1927

Significant Person

(Complete only if Criterion B is marked above.)

N/A

Cultural Affiliation

N/A

Architect/Builder

Engineer: Joseph H. Moragne

Builder: George R. Ewart, Jr. and T. Brandt

Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations.)

The Hanapepe Road Bridge is historically significant at the local level under criterion A for its associations with the development of land transportation on Kauai in the early twentieth century. It is also significant at the state level under criterion C as an excellent and rare example of a reinforced concrete deck girder bridge in Hawaii.

The 1911-1927 period of significance was chosen as this was when the bridge was completed and when the elevated walkway was added.

Hanapepe Road Bridge
Name of Property

Kauai Hawaii
County and State

Narrative Statement of Significance

(Provide at least **one** paragraph for each area of significance.)

The Hanapepe Road Bridge is significant for its contributions to the development of Kauai's transportation system, and the inception of the Kauai Belt Road.

Following the annexation of Hawaii by the United States in 1898, the Organic Act of 1900 abolished the Islands' Department of the Interior, and charged the newly formed Office of the Superintendent of Public Works to oversee the expenditure of territorial funds for road and bridge work. In 1905, with the establishment of county governments, these local jurisdictions were granted the power to tax and spend, as well as the responsibility to build and maintain their roads and bridges. However, the counties still relied heavily upon the territorial, and in turn the federal, government for funding for internal improvements.

To aid such endeavors the 1911 Territorial Legislature passed Act 166 which allowed for the issuance of territorial bonds for the purpose of developing belt highways on each of the main islands. Loan Commissions, comprised of the County Superintendent of Public Works, the chair of the County Board of Supervisors, and three residents of an island, were formed for each of the counties and given the responsibility of overseeing the expenditure of the bond moneys allocated to the County. Prior to the establishment of the federal aid program for highways in 1925, bridges along the belt highways in Hawaii were designed by county engineers using moneys awarded by the Loan Commissions. Each County had its own bridge design capability within the County Engineer's Office.

The 1911 Territorial Legislature appropriated \$100,000 for Kauai's Belt Road and bridges. The Hanapepe Road Bridge was the first erected on Kauai with these funds and contributed to the development of the county's belt road plan which connected the previously isolated communities on Kauai's west and east sides with a paved highway and a series of concrete bridges. The Hanapepe Road Bridge is one of five bridges constructed by this 1911 program to remain in operation, and the only one on Kauai's west side. Only two other bridges associated with the early expansion of the belt road up the island's west side remain standing, Wailana Bridges #3 and # 4, on Maluhia Road. Both of these bridges are simple concrete slab bridges which have been widened and were built with County funds in 1910. These two are the only bridges on Kauai older than the Hanapepe Road Bridge.

Prior to this concrete deck girder bridge a metal truss bridge spanned the Hanapepe River at this location. The County was in the process of replacing

Hanapepe Road Bridge

Name of Property

Kauai Hawaii

County and State

this bridge, when the Territorial funding became available leading to the County using the Belt Road moneys to construct the bridge. The bridge was built on the former bridge's abutments. County Engineer J. H. Moragne prepared the plans and specifications for the bridge's reinforced concrete superstructure and piers. The contract was awarded to George R. Ewart, Jr. and T. Brandt for the low bid of \$11,950 in August 1911, and the bridge was completed in March 1912. The *Garden Island* predicted the bridge would be "a handsome piece of concrete architecture," [*Garden Island*, July 25, 1911, p. 1] and upon its completion rightfully declared it was without equal on Kauai [*Garden Island*, March 5, 1912, p. 1]. The distinctive elevated 1927 sidewalk addition was designed by the County Engineer of that time, R. L. Garlinghouse at a cost of \$2,600.42. It is the only known example of such a bridge walkway to remain in Hawaii.

The bridge is also significant as an excellent example of an early twentieth-century reinforced concrete deck girder bridge.

The first reinforced concrete girder bridges were built in France circa 1893, and the earliest known bridges of this type appeared in the United States during the opening decade of the twentieth century. In the 1910s, several state highway departments issued standardized plans for concrete girder bridges, with Maryland's State Roads Commission including a design for a through girder bridge in their state's first standard bridge plans in 1912. Although girder bridges were common from the 1910s through the 1930s, this form was usually employed on shorter bridges. The use of concrete girders faded during the 1940s and post-World War II period in favor of steel I-beam and pre-cast concrete spans due in part to the cost of scaffolding and formwork.

Reinforced concrete girder bridges generally consist of cast-in-place, monolithic decks and girder systems. The primary members of a girder bridge are the girders, the deck, and, in some cases, such as the Hanapepe Road Bridge, floor beams. The deck does not contribute to the strength of the girders and only serves to distribute live loads to the girders. If floor beams are used, they are part of the superstructure and not the deck. The girders extend above the deck, to form the bridge's parapets. This arrangement of members makes it virtually impossible to widen a girder bridge. As a result, most bridges built in this manner have been replaced because their roadway widths were too restrictive for the safety of modern traffic.

The Hanapepe Road Bridge is the oldest reinforced concrete deck girder bridge in the islands and also the longest bridge of its type in the state. With a maximum span of forty-eight feet and a total length of almost two hundred feet, the bridge was significantly larger and more technically complex than other bridges constructed during this period. The only other surviving concrete deck girder bridge on Kauai, and in the state, is the single span Nawiliwili Bridge with its dual travel ways, which was completed in 1920.

Designed by Joseph Hughes Moragne, Kauai's County Engineer, the Hanapepe

Hanapepe Road Bridge

Name of Property

Kauai Hawaii

County and State

Road Bridge is an early example of the use of formal engineering expertise in bridge making in Hawaii. Of all the early bridge engineers in Hawaii, Moragne is considered to have produced the most technologically innovative work for his time.

Moragne, was born and educated in Alabama. Prior to his arrival in Hawaii in 1898, he served in the U.S. 2nd Regiment, 5th Engineer Battalion during the Spanish-American War. He worked with the Territorial Survey Department on the island of Hawaii and the Territorial Department of Public Works before moving to Kauai to become the that islands' first County Engineer in 1907. Moragne introduced the use of reinforced concrete for bridges on Kauai beginning in 1909 with the Huleia Cane Haul Bridge, the earliest known reinforced concrete bridge in the territory. He also engineered the Kauai Belt Road, which was constructed from 1910-1920, and engineered the Kokee irrigation system. In addition to the Hanapepe Road Bridge, extant bridges designed by Moragne for the belt highway include: the Waioli Bridge (concrete through girder, 1912), the Waipa Stream Bridge (concrete T-Beam, 1912), Waikoko Stream Bridge (concrete through girder, 1913), and the Hanalei River Bridge (steel truss, 1912), all of which were part of the belt highway on Kauai's eastern shore. In 1919 this talented engineer left the County to work for Lihue Plantation. Under their employ he designed numerous irrigation ditch systems, as well as the Hanalei and Kaapoko Tunnels, which were 6,028 feet and 3,558 feet long, respectively. He retired from the plantation in 1937.

Thus the Hanapepe Road Bridge is significant not only as a rare west side reminder of the early efforts to construct a Belt Highway on Kauai, but also for its concrete deck girder design. It is the oldest and longest concrete deck girder bridge in the State and may possibly be one of the few bridges of this type and length to survive throughout the United States.

Hanapepe Road Bridge
Name of Property

Kauai Hawaii
County and State

9. Major Bibliographical References

Bibliography (Cite the books, articles, and other sources used in preparing this form.)

Garden Island, "Belt Road Commission Holds Preliminary Meet", May 16, 1911, page 1

Garden Island, "Supervisors Meet", June 13, 1911, pages 2 and 6

Garden Island, "Supervisors' Monthly Report", July 18, 1911, page 1

Garden Island, "Loan Commission", July 26, 1911, page 1

Garden Island, "County Fathers in Their Usual Meeet [sic]", August 8, 1911, page 1

Garden Island, "Tenders, Concrete Bridge", August 8, 1911, page 6

Garden Island, "Loan Fund Meets", September 26, 1911, page 6

Garden Island, "Loan Fund Men Praised", January 9, 1912, page 1

Garden Island, "New Bridge is Pau", March 5, 1912, page 1

Garden Island, "Civil Engineer Joseph H. Moragne," April 21, 2013.

Hawaii Heritage Center and School of Architecture, University of Hawaii, *State of Hawaii Historic Bridge Inventory and Evaluation*, Honolulu: Department of Transportation, 2008

KAI Hawaii, *Inspection Report, Bridge Inspection and Appraisal, Bridge Number 007190071119004 Hanapepe Bridge*, Lihue: County of Kauai Department of Public Works, 2007

Parsons Brinckerhoff and Engineering and Industrial Heritage, *A Context for Common Historic Bridge Types*, Washington D. C.: National Cooperative Highway Research Program, Transportation Research Council and National Research Council, 2005

MKE and Fung Associates, *State of Hawaii Historic Bridge Inventory and Evaluation*, Honolulu: Department of Transportation, 2013

Spencer Mason Architects, *Historic Bridge Inventory: Island of Kauai*, Honolulu: State of Hawaii Department of Transportation Highways Division in cooperation with the U.S. Department of Transportation Federal Highway Administration, 1989.

Hanapepe Road Bridge
Name of Property

Kauai Hawaii
County and State

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # _____
- recorded by Historic American Engineering Record # _____
- recorded by Historic American Landscape Survey # _____

Primary location of additional data:

- State Historic Preservation Office
 - Other State agency
 - Federal agency
 - Local government
 - University
 - Other
- Name of repository: _____

Historic Resources Survey Number (if assigned): _____

10. Geographical Data

Acreage of Property less than one acre

Use either the UTM system or latitude/longitude coordinates

Latitude/Longitude Coordinates

Datum if other than WGS84: _____ Bing Maps _____

(enter coordinates to 6 decimal places)

Latitude: 21.910163

Longitude: 159.590084

Hanapepe Road Bridge
Name of Property

Kauai Hawaii
County and State

Or
UTM References

Datum (indicated on USGS map):

NAD 1927 or NAD 1983

- | | | |
|----------|-----------|-----------|
| 1. Zone: | Easting: | Northing: |
| 2. Zone: | Easting: | Northing: |
| 3. Zone: | Easting: | Northing: |
| 4. Zone: | Easting : | Northing: |

Verbal Boundary Description (Describe the boundaries of the property.)

The property being nominated includes all the property owned by the County of Kauai in 2017 as described by the portion of Tax Map Key (4)-1-9-011: 999 which extends over the Hanapepe River.

Boundary Justification (Explain why the boundaries were selected.)

This is the parcel of land associated with this bridge since its construction.

Hanapepe Road Bridge
Name of Property

Kauai Hawaii
County and State

11. Form Prepared By

name/title: Fung Associates
organization: _____
street & number: 1833 Kalakaua Avenue, Suite 1008
city or town: Honolulu state: Hawaii zip code: 96815
e-mail: projects@funghawaii.com
telephone: (808)-941-3000
date: September 15, 2017

Additional Documentation

Submit the following items with the completed form:

- **Maps:** A **USGS map** or equivalent (7.5 or 15 minute series) indicating the property's location.
- **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.
- **Additional items:**
- **Owner:**
County of Kauai
Department of Public Works
4444 Rice Street, # 175
Lihue, Hawaii 96766

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 100 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management, U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.

USGS Map 1



USGS Map 2



Elevations

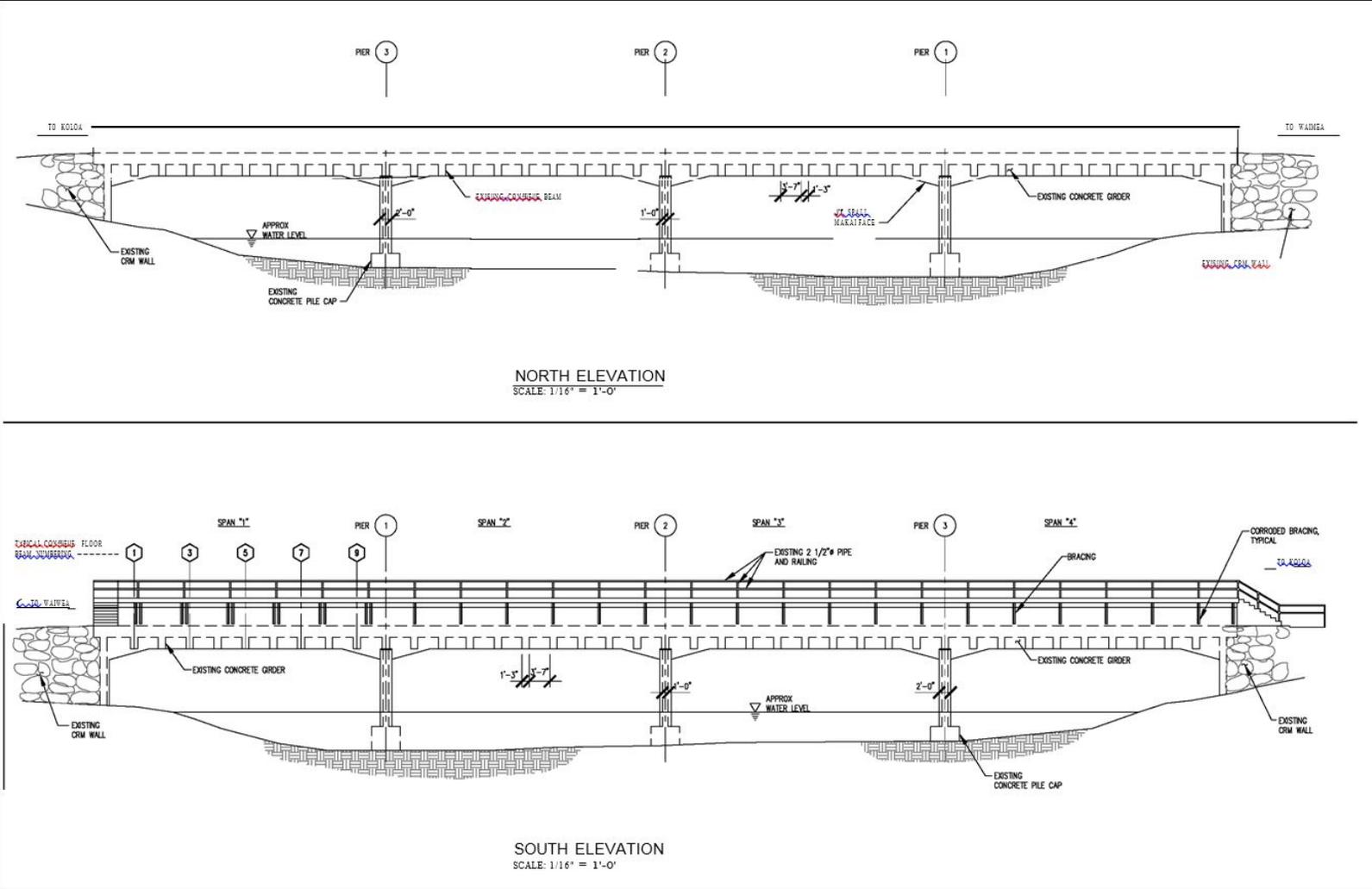


Photo Log

Name of Property: Hanapepe Road Bridge

City or Vicinity: Hanapepe

County: Kauai State: Hawaii

Photographer: Don Hibbard

Date Photographed: December 7, 2015

View of the downstream side from the south

1 of 5



Photo Log

Name of Property: Hanapepe Road Bridge

City or Vicinity: Hanapepe

County: Kauai State: Hawaii

Photographer: Don Hibbard

Date Photographed: December 7, 2015

View of the west approach from the west

2 of 5



Photo Log

Name of Property: Hanapepe Road Bridge

City or Vicinity: Hanapepe

County: Kauai State: Hawaii

Photographer: Don Hibbard

Date Photographed: December 7, 2015

View of the east approach from the east

3 of 5



Name of Property: Hanapepe Road Bridge

City or Vicinity: Hanapepe

Photo Log

County: Kauai State: Hawaii

Photographer: Don Hibbard

Date Photographed: December 7, 2015

View of the upstream parapet from the southeast

4 of 5



Photo Log

Name of Property: Hanapepe Road Bridge

City or Vicinity: Hanapepe

County: Kauai State: Hawaii

Photographer: Don Hibbard

Date Photographed: December 7, 2015

View of the downstream parapet and walkway from the northeast

5 of 5

